Case 14188
Ossifying fibroma of the mandible

Arne Impens[1], Adelard De Backer[1], Carine Petré[2], Herwig Van Dijck[3], Filip Vanhoenacker[2, 4, 5]

1. Department of radiology, AZ Sint-Lucas Gent, Belgium
2. Department of radiology, General Hospital Sint-Maarten, Duffel-Mechelen, Belgium
3. Department of pathology, General Hospital Sint-Maarten, Duffel-Mechelen, Belgium
4. Department of radiology, Antwerp University Hospital, Antwerp, Belgium
5. Department of radiology, Gent University Hospital, Gent, Belgium
University Hospital Antwerp

Section: Head & Neck Imaging
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Patient: 54 year(s), male

Clinical History

A 54-year-old man presented to the maxillofacial surgeon with a slowly increasing swelling of the lower left jaw for more than 6 months. The lesion was painless, hard and immobile on palpation.

Imaging Findings

A cone beam CT (CBCT) of the mandible showed a well-circumscribed osseous lesion in the left mandible, measuring 46 x 22 x 33 mm. The lesion was radiopaque with a ground glass appearance. There was bone expansion with cortical thinning but absence of cortical breakthrough and no periosteal reaction (Fig.1-4). The mandibular canal was displaced inferiorly.
A biopsy was performed and subsequent histopathological examination showed cellular connective tissue with an osteoblastic rim on the surface of woven bone intermingled with a fibrous component without atypia (Fig. 5). Diagnosis of ossifying fibroma was made and the lesion was partially resected.

Discussion

Ossifying fibroma is an benign neoplasm composed of fibrous tissue and mineralized material. The previously used term cemento-ossifying fibroma was renamed as ossifying fibroma according to the revised WHO classification (2005) [1, 2].
It is thought that ossifying fibromas of the jaw arise from the periodontal ligament but this remains controversial as similar lesions may appear in bones that lack this structure. Some authors suggest a possible relationship with previous trauma as a triggering factor [3]. The craniofacial bones are the most frequently involved with a predilection for the region inferior to the molars and premolars of

the mandible. Ossifying fibromas are most frequently diagnosed during the third and fourth decades with a marked female predilection (female:male ratio: 4:1). A , ore aggressive, juvenile variant exists that most commonly affects boys younger than 15 years [1, 3, 4].

The clinical presentation usually consists of a painless slowly growing mass. Lesion expansion may result in tooth displacement, root resorption and facial asymmetry if untreated. The mass is covered with normal mucosa. Lymphadenopathy is not seen [3-6].

Different radiographic patterns have been described depending on the amount of mineralized tissue. Most frequently the lesion is mixed radiopaque-radiolucent and less commonly either radiolucent or radiopaque. The degree of opacity of the lesion depends on its age. With maturation the lesion becomes more radiopaque due to progressive matrix mineralization. The lesion is usually unilocular although infrequently a multilocular appearance is seen. The main differential diagnosis consists of fibrous dysplasia if the lesion has a ground-glass attenuation. The margins of the lesion are always well demarcated whereas fibrous dysplasia may have ill-defined borders. The mandibular canal may be displaced inferiorly while in fibrous dysplasia the canal may be displaced in any direction. Usually the lesion displays concentric growth and buccolingual expansion. Tooth displacement and root resorption are seen in larger lesions [5, 7, 8].

The recommended treatment is complete surgical resection or enucleation since incomplete resection has a high recurrence rate. In our case complete resection was impossible due the proximity of the lesion to the mandibular canal. Surgical treatment may require bone grafting or reconstructive surgery. The estimated recurrence rate after appropriate surgical removal is 12% [5, 7].

Final Diagnosis

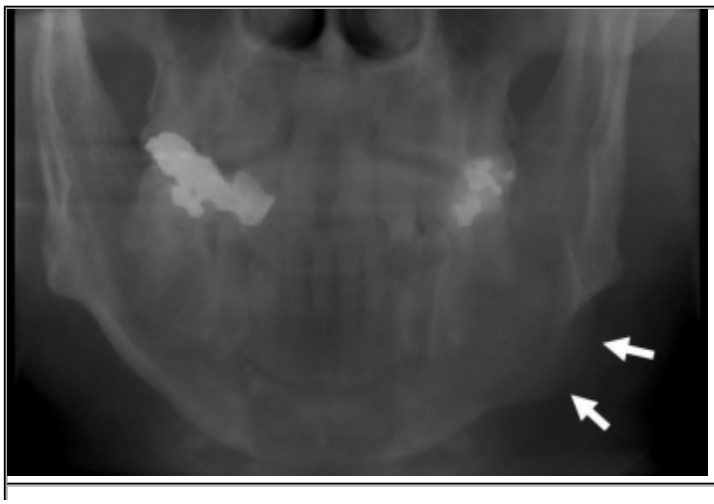
Ossifying fibroma

Differential Diagnosis List

Fibrous dysplasia, Cementoblastoma, Paget's disease, Periapical cemental dysplasia

Figures

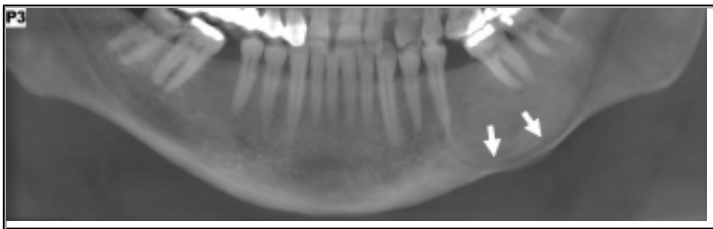
Figure 1 Scout view



Scout view demonstrates relative radiolucency at the left mandibular angle with an indistinct cortical margin (white arrows).

Area of Interest: Bones; Head and neck;
Imaging Technique: CT;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;

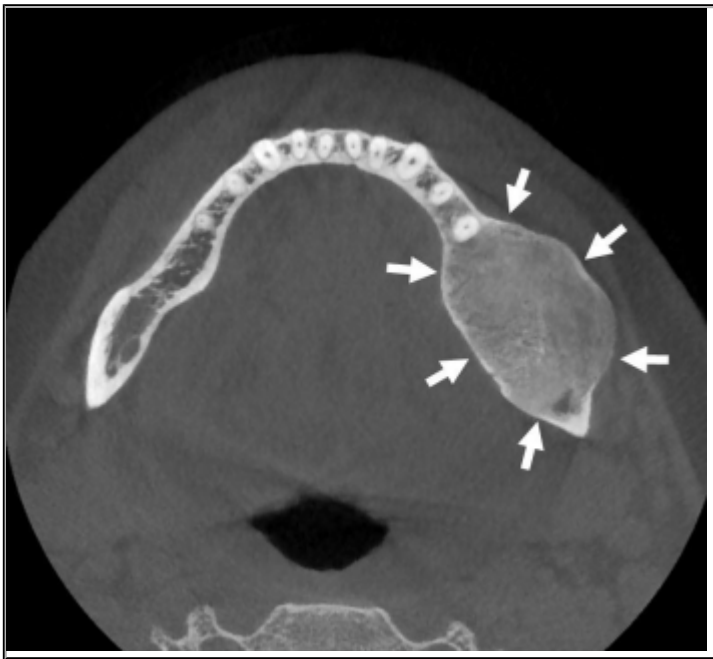
Figure 2 CBCT Panoramic reformation



Panoramic reformatted CBCT image of the mandible demonstrates a radiopaque lesion causing inferior displacement of the mandibular canal (white arrows).

Area of Interest: Bones; Head and neck;
Imaging Technique: CT;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;

Figure 3 Axial CBCT image



CBCT of the mandible showing an expansile, well-circumscribed lesion with ground glass appearance and buccolingual expansion in the left mandible (white arrows).

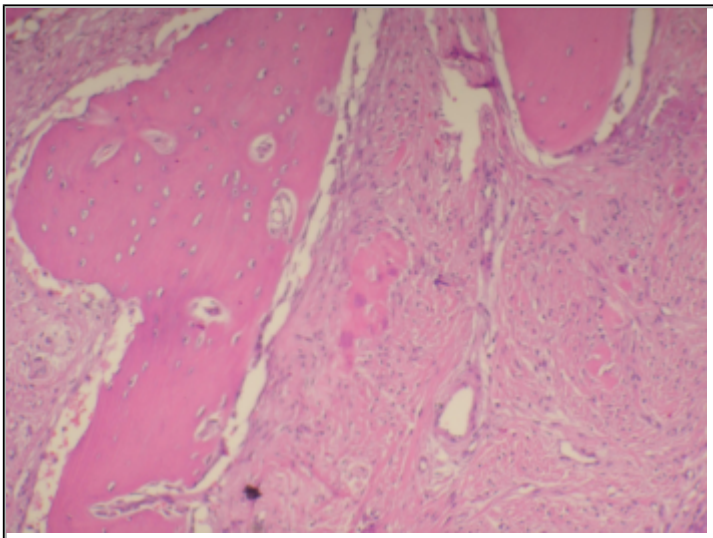
Area of Interest: Head and neck;
Imaging Technique: CT;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;

Figure 4 Parasagital reformatted image

Parasagital reformatted image demonstrates inferior displacement of the mandibular canal (white arrow), buccolingual expansion and ground-glass attenuation.

Area of Interest: Head and neck;
Imaging Technique: CT;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;

Figure 5 Histopathological examination



Histological examination shows mineralized material composed by woven bone, predominantly bordered by osteoblasts and interspersed by cellularized connective tissue (H & E staining).

Area of Interest: Head and neck;

Imaging Technique: Percutaneous;
Procedure: Diagnostic procedure;
Special Focus: Neoplasia;

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Citation

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3. Department of pathology, General Hospital Sint-Maarten, Duffel-Mechelen, Belgium
4. Department of radiology, Antwerp University Hospital, Antwerp, Belgium
5. Department of radiology, Gent University Hospital, Gent, Belgium (2016, Dec. 4)

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